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PSYCHOLOGY.¹

In his "Introduction to Comparative Psychology," (*Contemporary Science Series*, Walter Scott & Sons, London), Professor Lloyd Morgan's central object is, he tells us in his preface, "to discuss the relation of the psychology of man to that of the higher animals...a secondary object...is to consider the place of consciousness in nature, the relation of psychical evolution to physical and biological evolution and the light which comparative psychology throws on certain philosophical problems." As far as the formal element in his book is concerned, Professor Morgan makes no claim to originality. He has made use, so far as I can see, of three architectonic principles. The first of these is the symbolic conception of consciousness as a "wave;" the crest of the wave corresponds to the "focus of consciousness," more usually called the centre of attention, while the other portions of the wave represent the "marginal" elements, those of which we are conscious but to which we are not attending. The second is the conception of "relations" as "the momentary feelings accompanying transitions in consciousness." The first of these conceptions Professor Morgan credits to Professor James, of Harvard; the second to Mr. Spencer. The third principle he does not explicitly mention in his preface, probably because it would be difficult to ascribe it, in the form in which it is stated by himself and others, to any given individual. It is the conception of a selective, synthetic activity as characteristic of subject and object alike; this, in the object, is the activity manifested in the objective sequences which are formulated as natural laws; in the subject it is that "to which the term Will is properly applicable" (page 315).

In the few pages of Prolegomena the doctrine of monism is briefly outlined, first, as the monistic theory of knowledge, second, as the monistic interpretation of nature, third, as a monistic analysis of nature into mental and material "aspects," distinguishable in thought but not separable in existence. The first three chapters prepare the way for the detailed discussion that follows. The conception of consciousness as a wave is made plain in chapter I; in chapter II, on the "Physiological Conditions of Consciousness," it is shown that it matters little whether we take as our working hypothesis the pure monistic

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identification of the mental and physical series or the empirical dualism commonly known as the doctrine of parallelism. Chapter III inquires into the inevitable limitations of the method of analogy as applied to the interpretation of other minds than ours.

In the thirteen chapters following, Professor Morgan applies himself to the purely psychological part of his work, and throughout, after devoting a chapter or two to the analysis of the phenomena of the human mind, he endeavors in the next chapter to determine whether analogous mental states are to be ascribed to animals other than man. He begins his inquiry with the more concrete phenomena of the specifically inner life and concludes that in the lower animals concrete representative ideas are suggested by sense impressions, associated with one another and remembered very much as they are in ourselves. He then takes up the difficult problems of sense experience in the chapter on the "Analysis of Impressions;" the ultimate elements of impressions are distinguished as sensations of various kinds; the chapter on "Synthesis and Correlation" then undertakes to show "how these sensation elements are combined synthetically to form impressions as we know them; how they enter into correlation with each other; and how they call up through association representations of similar sensation elements." Under the caption "The Sense Experience of Animals," Professor Morgan gives his reasons for concluding that the sense experience of the higher vertebrates is much the same as our own, while of that of the lower forms of life we probably can form no representative idea whatever.

Chapter XI develops in sharp relief the doctrine of lower (i. e. sub-cortical) automatic centers standing under the control of higher (cortical) centers whose augmenting or inhibitory activity is in turn determined by sensory (conscious) centers. The activities of these latter centers, again, are determined by the emotional tone associated with their functioning. Professor Morgan also inclines to the belief that special centers exist for the control of these purely sensory centers (pp. 194-5). Chapter XII, entitled "Instinct and Intelligence," applies these principles to the explanation of the conduct of animals, showing that while animals may act instinctively, their habits are for the most part empirically determined by the method of trial and error, and consequently must be regarded as fully conscious. To this method of trial and error Professor Morgan would restrict the term intelligence.

Chapters XIII and XV on the "Perception of Relations" and "Conceptual Thought," are perhaps the most suggestive in the book. A relation is the transition between two focal states of consciousness;

originally marginal, it in the course of evolution becomes focal. This is probably due to the necessity of intercommunication, which can be carried on in terms of relation only, and language has been the instrument by means of which this immense advance in mental evolution has been effected. When a given relation is not only itself focal, but is apprehended without reference to any particular terms related, it is called a concept. Abstraction is a process involving a great relative intensification of the focal element to the greater or less exclusion of the marginal elements—it is, therefore, essential to the development of concepts. There is no evidence to show that the lower animals can perceive relations or form concepts. And if we take “reason” as involving an apprehension of similarity of relation in things diverse, we have no evidence for the ascription of reason to animals other than man.

The three following chapters are rather metaphysical and philosophical than psychological. Chapter XVII expands the conception already outlined in the Prolegomena of subject and object as later differentiations of an originally homogeneous experience, and endeavors to identify that selective, synthetic, orderly and determinate activity which in the object we term the operation of natural law with that similar activity which in the subject we term Will. Self-consciousness in its most highly developed form involves “first, the conception of the subjective as distinguished from the objective; secondly, the concentration of the net result of all subjective experience into one generalized concept; and thirdly, the further conception of this net result as due to the determinate working of an activity which is synthetic and selective.” This form of self-consciousness is attained by relatively few men; in the lower animals it is not probable that it exists at all.

Chapter XVIII takes up what in the Prolegomena is called the monistic interpretation of nature, and develops the conception of consciousness as a product of organic evolution. Chapter XIX, on “Selective Synthesis in Evolution,” carries on in like manner the monistic analysis, endeavoring to trace throughout the inorganic and organic world the varying manifestations of that selective, synthetic activity which the monist regards as the ultimate essence of all.

Chapter XX and last, returns to psychology proper and compares the emotional and moral life of men and animals. The emotions of some of the lower animals are probably very like those of man. This is true especially of the offensive and defensive emotions, and to some degree of the sense of the beautiful. But there is no reason for

believing that brutes can form an aesthetic judgment or attain to an aesthetic or moral ideal.

It is not my intention to enter into any detailed criticism of Professor Morgan's book, yet there are some points which he will, I hope, make clearer in his forthcoming "Psychology for Teachers." I do not clearly see the laws by which the transition from the concrete to the general relation is effected; I would like to know why the word "concept" is to be restricted to generalized vector states and denied of analogous static states; I would like to see the doctrine of "automatic" centres and "control" centres brought more into harmony with the results of introspection; and I would like Professor Morgan to show why he identifies the selective, synthetic activity of nature, not only with the intrinsic properties of mental states, such as tendencies to development, to suggestion of ideas, to the production and prevention of muscular contraction, etc., which are its true analogues in the inner life, but also with that enigmatic activity of will, which seems at times to run counter to all these momenta and to determine thought and conduct in a fashion diametrically opposed to the provocation of the immediate environment. That this activity is without determinate laws I do not for a moment believe. It is probable that in it we see the present, conscious representative of our total individual and hereditary experience in some way brought to bear upon the immediate present. But as I do not think that even descriptive psychology can afford to ignore it, so I would not hastily identify it with any other phenomenon of inner or outer experience. That tendency to identify the energy or activity of the objective world with the "will" of the subjective world which has been more or less noticeable in philosophy since the days of Schopenhauer, is but a more refined form of the animistic theories of our prehistoric ancestors and of their successor, the theistic interpretation of nature which is still current. That there may be truth in such theories I am not prepared to deny, but as they cannot be tested by appeal to experience, nor are essential to the construction of a scientific conception of nature, they have at present no place in a reasoned scheme of knowledge.

One other point calls for comment. In his chapter on the physiological conditions of consciousness, Professor Morgan has, I think, failed to make use of the suggestive material brought to light by recent researches into what Pierre Janet calls "*la désagrégation psychologique*." It would, perhaps, be too much to say that the study of mental disorganization has established the possibility of mental states existing in connection with a given brain without forming part of the

"consciousness" normally related to that brain. But there is certainly much evidence for this hypothesis, and, if we adopt it, it would obviate all the verbal absurdities of "unconscious consciousness" and the sundry difficulties that attach to other theories. Moreover, the theory is directly in line with Professor Morgan's fundamental conceptions and I am rather surprised that he has not felt inclined to make more direct use of it.

Taken as a whole, Professor Morgan's book is without doubt the best introduction to psychology for mature minds that we possess. It is admirably clear, coherent and consistent. Notwithstanding his disclaimer of originality, in so far as regards his architectonic principles, it is not too much to say that he has succeeded in utilizing those principles for the organization of his bewilderingly complex material with greater success than has attended the efforts of either Professor James or Mr. Spencer. Many of us who are accustomed to use in teaching psychology the synthetic method which Professor James condemns so vigorously, have done so, not because we were especially wedded to the synthetic method as such, but because all attempts hitherto made to present the subject analytically only result in confusing the beginner. Professor Morgan's book seems to me the first successful attempt to make psychology intelligible by the analytic method, and I intend to try at once the experiment of using it as a text-book with beginners.

Furthermore, the book is most refreshingly free from the phraseology of the schools. The old tripartite division of the Englishmen and the "faculties" of popular superstition are conspicuous by their absence, and the reader is brought face to face with the facts. Throughout, the influence of Professor James' stimulating example seems traceable, but there is a consistency and precision in Professor Morgan's thought which one misses in Professor James'. It is true that precision and consistency in psychology can be attained, in the present state of the science, only by the sacrifice of much that the candid student would like to know, and a critical reader would doubtless sow Professor Morgan's pages thickly with interrogation points and carets. But the beginner needs most of all clearness, precision and substantial accuracy; the further processes of exception, modification and introduction of alternative theories are best deferred to a later stage. Professor Morgan has had the needs of the beginner in mind and has met them better than any contemporary writer.